



Intra-Basin Water Movement

Major Principles and Recommendations

Prepared by the Alberta Water Council
for Alberta Environment
June 1, 2008

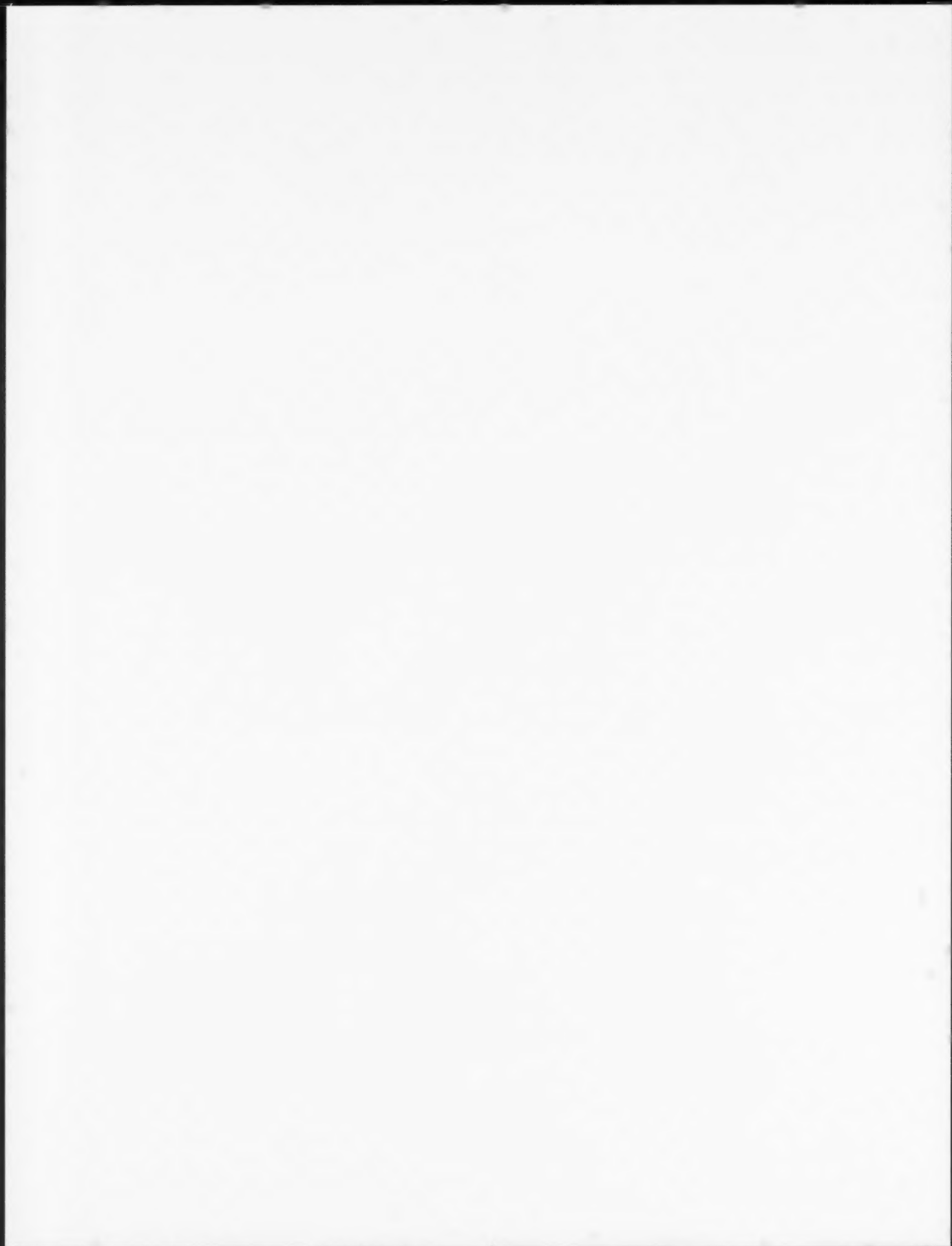
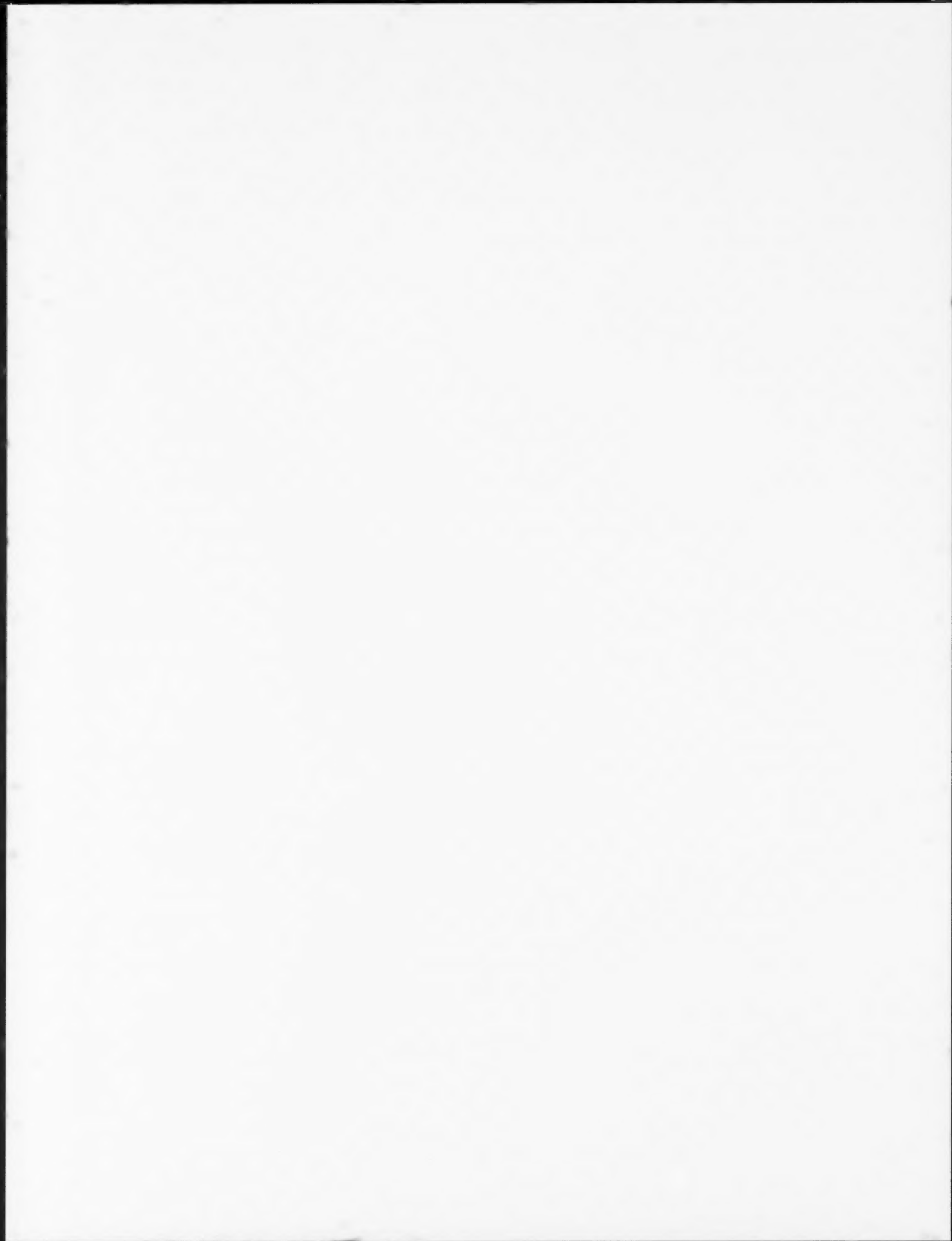


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Introduction

The Alberta Water Council was established in 2004 to provide direction and advice to the Government of Alberta, stakeholders and the public on matters related to the *Water for Life* strategy. In January 2007, in response to public concerns about a water licence application in central Alberta, Environment Minister Rob Renner asked the Council to determine if the current approach to decisions that involve the movement of water from one sub-basin for use in another sub-basin within the same major river basin is still valid and what, if any, changes should be made to the current approach and under what conditions. The Council agreed to advise the Minister on this matter. An Intra-Basin Water Movement Project Team was established and Council approved its terms of reference in June 2007. (See Appendix A for a list of team members, Appendix B for a list of Alberta Water Council Board of Directors and Alternates and Appendix C for the team's terms of reference.)

The team reviewed concerns and other materials that had been filed with the Government of Alberta to gain an understanding of the issues associated with the current decision-making approach and process. The team solicited input from interested parties including various sector representatives via an on-line questionnaire survey. The team also engaged a consultant to review decision-making practices in other jurisdictions related to intra-basin water movement. This information guided the team in its analysis and subsequent recommendations.

Although the Minister's request was precipitated by a specific situation, the team's mandate was to provide advice on a province-wide approach to allocation decisions that involve the movement of water from one sub-basin for use in another sub-basin (intra-basin water movement).

The Alberta Water Council's recommendations set out in this report are intended to apply to new intra-basin water movement applications or changes to existing intra-basin water movement licences. The recommendations are not intended to be applied retroactively or to other types of water diversion licences, which were considered out-of-scope for this project.

The report commences with a review of the major principles that should apply for any intra-basin water movement application in the province. These principles relate to the general values endorsed by Albertans and the principles that should be applied in addressing the recommendations. The next section lays out the Council's recommendations. A final section addresses outstanding issues that remain to be resolved by Alberta Environment, since they were considered out-of-scope for this project.



Major Principles

"The Alberta Water Council supports the provincial *Water for Life* strategy, which states that "Alberta's water resources must be managed within the capacity of individual watersheds."

The Alberta Water Council supports the following principles. These principles should be reflected in all the programs and initiatives undertaken by the province to address water issues related to intra-basin water movement.

This section is divided into two parts: values-related and process-related principles. Values-related principles refer to attitudes strongly supported by Albertans which were identified through the *Water for Life* consultation process. Process-related principles relate to the integrity with which processes are developed and carried out.

Values Principles

1. *Living within a watershed*

The Alberta Water Council supports the provincial *Water for Life* strategy, which states that "Alberta's water resources must be managed within the capacity of individual watersheds." In an ideal world, each watershed¹ would have sufficient capacity to serve local residents and no intra-basin water movement would be necessary. However, the team acknowledges that this may not always be possible, due to natural variability in water generated across the province and growing scarcity of water in some watersheds, which may require intra-basin water movement for socioeconomic reasons. As with all applications for licences, the balance between environmental protection and socioeconomic means must be considered. Nevertheless, the need to 'live within our means' – and support sustainable practices – should be an important consideration in the evaluation of any intra-basin water movement application.

2. *Water conservation, efficiency and productivity*

The Alberta Water Council supports the principle of water conservation, efficiency and productivity as a critical tool in achieving the objectives of the *Water for Life* strategy, as well as ensuring that new intra-basin water movement licensees use the least possible amounts of water. In addition to preserving this precious resource, water conservation, efficiency and productivity also reduce the potential impact on the local ecosystems of both the source and receiving bodies of water.

¹ Please see page 9 for discussion about the terminology for 'watershed' and 'basin.'

Process Principles

3. *Different levels of review and reporting*

Potential impacts should be considered in the decision-making process for all intra-basin water movement applications. Different levels of review should be developed to apply to the degree of potential impact. All applications should be subject to a process that identifies the type of review required. For example, no review may be required in the case of an administrative-type change, while a full review, including an official environmental impact assessment, would be undertaken for projects deemed to be significant. As well, applications with different levels of impact would require different levels of reporting; applications with larger potential impacts would require more extensive and frequent reporting and information.²

4. *Flexibility*

The structure of all reviews, decisions and programs should be flexible enough to respond and adapt in a timely manner to changing circumstances, including the introduction of new technology or new information.

5. *Consistency*

The process should be carried out in a consistent fashion across regions and among applicants while recognizing the varying degrees of review and reporting that may be required.

6. *Open and transparent process*

The process for intra-basin water movement applications should be open and transparent to all.

7. *Clear roles and responsibilities*

Water is a complex issue and many government departments, agencies, and volunteer organizations are involved in managing aspects of Alberta's water strategy, *Water for Life*. There should be clear communication to all participants as well as the general public regarding the roles and responsibilities of various organizations, particularly any group involved in the watershed planning process, including Watershed Planning and Advisory Councils and Watershed Stewardship Groups.

² See page 6 for further discussion on the decision tree process that would be used to determine the level of review and reporting required



Recommendations to Improve the Decision-Making Process

The following recommendations are being put forward by the Alberta Water Council to address issues related to intra-basin water movement. These recommendations reflect the principles discussed in the previous section of this report.

Please note that 'major basins' are defined in the *Water Act*. These recommendations refer to the sub-basins of these major basins.

1. Standard Water Application Process

"... the degree of potential impact associated with an intra-basin water movement application should be balanced with the information required and the level of scrutiny it undergoes."

Currently, Alberta Environment treats intra-basin water movement applications in the same manner as standard water licence applications. However, the current decision-making process is not well-documented from an administrative viewpoint and is confusing to many. The Director has a significant amount of discretion in the decision-making process, the boundaries for which are not clear. In support of Principle #6 which calls for an open and transparent process, the Alberta Water Council recommends that the existing standard application process be clarified and documented immediately, so project proponents and the public understand both the process involved and the factors considered in the decision related to a standard application.

Recommendation 1.1 Clarify and document the standard water application process.

2. Open and Transparent Process

Also in support of Principle #6, the decision-making process for intra-basin water movement should allow for public participation, including residents of both the source and the receiving sub-basins. Public participation should include broad advertisement of the application, accessibility of public documents and sufficient time for meaningful public comment. Those projects with the potential for greater impact and greater regulatory scrutiny may require broader public notification and additional time for comments.

Decisions on intra-basin water movement applications should be well documented, including the underlying reasoning for the decision. Decisions should be clearly justified and supported. Decisions should also include a description of the process, so that applicants and members of the public have an understanding of the steps involved and how issues were addressed. Alberta Environment should communicate its decision fully, including its analysis of the issues and rationale for the decision, in order to ensure transparency of the process, as well as to raise public awareness.

Recommendation 2.1 *Develop a meaningful public participation process that can be modified to suit different levels of impacts associated with an intra-basin water movement application. The process should address notification, public input, the content of the decision document and its communication.*

3. Decision Tree Concept

The Alberta Water Council supports strengthening the approval process for intra-basin water movement water licence applications. In order to accommodate different potential levels of impact associated with each application as indicated in Principle #3, a decision tree should be developed. The decision tree would be added or inserted into the standard water application process to address applications involving intra-basin water movement.

The decision tree would delineate a system whereby those projects with greater potential impact would involve greater regulatory review and scrutiny, while at the lowest impact, there may not be any additional review or requirements in addition to the standard application requirements. In other words, the decision tree would outline a regulatory process that considers the degree of potential impact associated with each application when determining the level of review and reporting required for applications. In this way, Alberta Environment can weigh the economic benefits with the protection of the rivers, sub-basins and/or surrounding ecosystems.

In developing this decision tree, attention should be paid to various factors that can influence the level of impact associated with the application. The decision tree development process should address how these factors could be 'weighted' to determine an overall impact level. The decision tree should clearly identify the actions applicants would be required to take if a certain impact was anticipated.

The development of the decision tree will likely involve two processes: one to determine the levels of review and reporting and another to create the review process itself, including all the factors that would be examined at a particular level of review.



Alberta Environment should lead the development of the decision tree with the involvement and input of the Alberta Water Council, the Watershed Planning and Advisory Councils and other interested parties. The decision tree could take the form of a matrix, flow chart or some other type of clear, graphic, understandable process. Alberta Environment created a similar decision tree to address the issue of produced non-saline water by coalbed methane operators.

Recommendation 3.1 *Create a decision tree for the intra-basin water movement process that balances the degree of potential impact associated with an intra-basin water movement application with the information required and the level of scrutiny it undergoes.*

Recommendation 3.2 *A review process associated with each level of impact needs to be developed. It may be included within the decision tree or it may exist in addition to the decision tree.*

Recommendation 3.3 *The decision tree should balance the degree of public participation and notice with the level of potential impact.*

4. Decision Tree Elements

The following elements should be evaluated to determine which might serve as 'triggers' to activate a more rigorous regulatory scrutiny for a new licence application when there is a higher potential for impact to a river, sub-basin and/or surrounding ecosystem. Some of these elements may also serve as factors to be considered at a particular level of review. In an effort to ensure an open and transparent process as stated in Principle #6, the elements, whether they serve as factors or triggers, should be quantifiable wherever possible.

"Decisions on intra-basin water movement applications should be well documented, including the underlying reasoning for the decision."

Following is a list of possible elements. These elements need to be considered for both the source and the receiving sub-basins. Some of these elements may already be serving as factors in the current application processes. This list is not exhaustive.

- *Quality and quantity of diversion and return flow*
- *Existing, potential and cumulative effects on the aquatic environment*
- *Existing, potential and cumulative effects on any applicable instream objective and/or Water Conservation Objective*

- Existing, potential and cumulative hydraulic, hydrological and hydrogeological effects
- Current and proposed water conservation, efficiency and productivity measures
- With respect to irrigation, the suitability of the land for irrigated agriculture
- Aboriginal requirements
- Rate of withdrawal and return flow
- Timing/season of withdrawal and return flow
- Level of flow relative to the requested withdrawal and return flow
- Distance of movement
- Proximity to a closed basin or sub-basin
- Other demands for the water
- Impact on water quality
- Number of affected municipal districts, counties or municipalities
- Public concern or controversy
- Potential change of use in an existing licence or a licence transfer
- Economic impacts in both the receiving and source sub-basins

Recommendation 4.1 *As part of the development of the decision tree, certain elements that will serve as 'triggers' for more rigorous regulatory scrutiny and as factors to be considered at a particular level of review need to be identified and quantified, where possible.*

5. Licence Conditions

As an outcome of the decision tree process, any licence obtained by the applicant could be subject to certain conditions. For example, Alberta Environment could place certain conditions on intra-basin water movement licences to ensure the least amount of water is withdrawn with the least environmental impact possible.

Recommendation 5.1 *Licence conditions should be associated with application approvals, where appropriate.*

6. Implementation

It is important that these intra-basin water movement recommendations be addressed in a timely, accountable manner by Alberta Environment as part of an open and transparent process.

Recommendation 6.1 *Alberta Environment should report back to the Alberta Water Council by December 2008 responding to the intra-basin water movement recommendations with a plan for timely implementation.*



Issues for Resolution by Alberta Environment

The following issues were topics of great discussion. These issues hindered the project team from reaching more definitive conclusions, and must be resolved by Alberta Environment before further steps can be taken to address intra-basin water movement.

Sub-Basin Definition

"It is challenging to determine the scale for defining a sub-basin, since there are so many differences between the various sub-basins in the province..."

It is challenging to determine the scale for defining a sub-basin, since there are so many differences between the various sub-basins in the province, including significant differences in size, volume of flow, flow rate and seasonality. However, in order to address intra-basin water movement issues and apply the intra-basin water movement recommendations, it is critical to have a common understanding of what constitutes an intra-basin water movement. And in order to understand what an intra-basin water movement is, a process to identify "sub-basins" needs to be undertaken.

The terms 'watershed' and 'basin' are both used to describe a geographic area of land that drains water to a common point or shared destination, which could be a stream, a river, a lake or some other body of water. All precipitation that falls within the collection area eventually drains to this point. The size of the collection area can vary from less than one square kilometre for a relatively small stream to more than one million square kilometres for a large river such as the Mackenzie River. While there has been some effort to use the terms in a fashion that, to some extent, depicts the size of the area, the terms are generally used interchangeably. To add to the language confusion, there is lack of alignment between the definition of major basins in Alberta identified in the *Water Act* and watersheds as described in the *Water for Life* strategy.

A basin can comprise several or many hundreds of sub-basins depending on the scale that is chosen to define the basin and sub-basin. There are no clearly-documented criteria for identifying sub-basins, other than the fact that a sub-basin is a sub-unit or tributary of a basin, and there is no formal recognition of sub-basins in Alberta's *Water Act* or regulations.

Sub-basins are usually identified on a project-by-project basis to facilitate discussion and for administrative purposes. Creating a standard definition of "sub-basin" was believed to be out-of-scope for this project and should be addressed by Alberta Environment.

Water Conservation Objectives

The use of Water Conservation Objectives in the intra-basin water movement process was a topic of discussion. Water Conservation Objectives are flow targets for the amount and quality of water that should remain in the river under the current water allocation system. They are often expressed as a percentage of the natural flow, relating to the level of flow required to ensure healthy aquatic and riparian ecosystems.

The development of Water Conservation Objectives is intended to reflect a balance between economic growth and the need to ensure the continuing health of the river and its ecosystem. Alberta Environment intends that in basins or sub-basins where licences are still being accepted, a Water Conservation Objective value will be placed on all new licences and on existing licences with a retrofit provision. A Water Conservation Objective established for each basin should identify the amount and timing of water that can be taken out of the basin.

There was concern among some team members about whether current Water Conservation Objectives adequately protect the aquatic ecosystem. This resulted in a range of opinions about their use as a current factor in the intra-basin water movement decision-making process. There was also discussion about whether the Water Conservation Objective setting process should be broadened to incorporate the interests of all interested individuals, groups and organizations. The process should be made more transparent so that all those directly affected as well as the general public understand and appreciate how the Water Conservation Objectives are developed. The topic of Water Conservation Objectives was believed to be out-of-scope for this project, and should be addressed by Alberta Environment.

Watershed Planning Advisory Councils

The *Water for Life* strategy established multi-stakeholder Watershed Planning Advisory Councils to lead in watershed planning, develop best management practices, foster stewardship activities within the watershed, report on the state of the watershed, and educate users of the water resource.

Watershed Planning Advisory Councils have a role to play in watershed planning decisions, including decisions regarding intra-basin water movement applications, to ensure that each individual sub-basin's issues are effectively addressed. At the present time, however, the specifics of how Watershed Planning Advisory Councils are involved in the intra-basin water movement decision-making process -- and water management decisions in general -- are unclear.



There is currently an Alberta Water Council Project Team reviewing issues related to shared governance and developing a watershed planning framework. It is anticipated that clarification of the roles and responsibilities of Watershed Planning Advisory Councils will be addressed in the Shared Governance and Watershed Planning Framework Project Team's final recommendations. Ultimately, it is incumbent upon Alberta Environment to clarify the roles of Watershed Planning Advisory Councils in general, and to specifically ensure that they are included in the intra-basin water movement review and decision-making process.

Appendix A: Members of the Intra-Basin Water Movement Team

Member:	Stakeholder Organization
Alden Armstrong / Tim LeClair / Jerry Cunningham	Métis Settlements General Council
Bill Berzins	Bow River Basin Council
Danielle Droitsch / Meghan Beveridge	Bow RiverKeeper
Sal Figliuzzi	Government of Alberta
Susanne Forbrich / Stacey Smythe	Environment Canada
Al Kennedy	Canadian Chemical Producers Association and Canadian Petroleum Products Institute
Keith Murray	Alberta Forest Products Association
Rick Quail	Alberta Urban Municipalities Association
Kim Sturgess	Alberta Economic Development Authority
Bill Symonds	Government of Alberta
Secretariat:	
Karen McCallion, Alberta Environment	
Lorie Wagner, Alberta Environment	
Sari Shernofsky, writer	

Appendix B: Alberta Water Council Board of Directors and Alternates

Broad Category	Representative	Alternate
Industry		
Chemical and Petrochemical	Al Kennedy	John Skowronski
Forestry	Keith Murray	
Irrigation	Ron McMullin	Jim Csabay
Livestock	Larry Nolan	Doug Sawyer
Mining	Judy Smith	Don Thompson
Oil and Gas	Kevin Stashin	J. David Rushford
Power Generation	Mike Kelly	Jim Hackett
Non-Government Organization		
Environmental	Danielle Droitsch	Cheryl E. Bradley
Environmental	Carolyn Campbell	Bob Cameron
Environmental	Jason Unger	Lindsay Telfer
Fishery Habitat Conservation	Ron Pearson	Peter Aku
Lake Environment Conservation	Jay White	Danielle Cobbaert
Watershed Planning and Advisory Councils	Dug Major	Celeste Nicholson
Wetland Conservation	Dave Kay	Jonathan Thompson
Government		
Large Urban	Rob Pritchard	Barry Anderson
Métis Settlements	Allan Wells	Jerry Cunningham
Rural	Dwight Oliver	Don Johnson
Small Urban	Richard Quail	Rachel Bocock
Government of Alberta and Provincial Authorities		
Alberta Agriculture and Food	John Donner	Jamie Wuite
Alberta Economic Development Authority	Kim Sturgess	Bill McAlpine
Alberta Energy	Peter Watson	Charlotte Moran
Alberta Environment	Jim Ellis	Beverly Yee
Alberta Health and Wellness	Alex MacKenzie	Debra Mooney
Alberta Sustainable Resource Development	Eric McGhan	Ken Ambrock
Alberta Water Research Institute	David Hill	Shawn Gervais
Ex-officio	Gordon Edwards*	

* Executive member as of December 2007.

Appendix C: Terms of Reference

Approved by the Alberta Water Council on: June 14, 2007

CONTEXT:

On January 30, 2007 the Honourable Rob Renner, Minister of Environment, met with the Alberta Water Council and asked Council "...to determine if the current approach on moving water from one sub-basin for use in another sub-basin is still valid and what, if any, changes should be made to the policy and under what conditions." in order to address recent concerns with respect to these decisions. The Minister indicated that, if the Council agrees to take on this task, he would like to receive recommendations by the fall.

The project team will operate in a manner that is consistent with the rules, policies and procedures adopted by the Alberta Water Council, including the use of consensus to make decisions in a multi-stakeholder process.

STRATEGIC INTENT (GOAL):

Ensure that recommendations made by the Team to address the Minister's question fully identify strengths and concerns with the current approach, and reflect a collaborative and integrated recommended approach to managing intra-basin water allocation decisions that involve the movement of water from one sub-basin for use in another sub-basin.

OBJECTIVES:

To effectively answer the Minister's question in a recommendation report that:

- Identifies strengths and issues with the current approach,
- Conducts a review of the current approach (in this review, the meaning of "approach" can include decision making processes, practice, regulation, policy, law, administrative guidelines and other matters deemed relevant to the review),
- Discusses what an intra-basin water movement decision making approach should accomplish,
- Makes recommendations to strengthen the approach, and
- Identifies issue areas where consensus cannot be reached.

The Team recognizes that other AWC Teams may be evaluating portions of the same issue. To this end, the Team will coordinate with and refer to other AWC Teams those issues that most closely align to their project's scope for inclusion in the most relevant project.

Appendix C: Terms of Reference (con't)

KEY TASKS:

- 1) Identify stakeholders and sectors that require meetings to fully explore concerns
- 2) Identify the current approach and issues:
 - a) Outlines current issues and concerns raised in respect to current decisions for intra-basin water movement.
 - b) Explores examples of existing intra-basin allocation diversions, their condition, volumes, use, and reasons for the diversion allocation being approved.
 - c) Outlines the current approach governing intra-basin water allocation decisions that involve the movement of water from one sub-basin for use in another sub-basin, highlighting any potential differences from the approach governing water allocation decisions within a sub-basin.
- 3) Write a recommendations report for the AWC that:
 - a) Identifies key principles or considerations, objectives and decision making mechanisms for intra-basin water allocation decisions that involve the movement of water from one sub-basin for use in another sub-basin.
 - b) Outlines the qualitative analysis of elements of the current approach and its ability to adequately address issues or concerns and key principles or considerations, objectives and decision making mechanisms for intra-basin water movement decisions.
 - c) Makes consensus recommendations for improved approaches.
 - d) Reports on tests of findings, principles and recommendations for change with identified stakeholders.
 - e) Identifies outstanding issues or concerns as necessary.

The Alberta Water Council will make recommendations that will allow the Team to finalize the report, and once approved, the Alberta Water Council will submit the report to the Minister.

TIMELINES and DELIVERABLES:

- Interim report September 17, 2007
- Final report and recommendations November 2007

Appendix C: Terms of Reference (con't)

MEMBERSHIP:

- Industrial Sectors: Chemicals/Petrochemicals, Forestry/Pulp and Paper, Power Generation (1 each)
- Municipal Government (1)
- Métis Settlements General Council (1)
- Provincial Government (2)
- Federal Government (1)
- Environmental Non-Government organizations (3)

BUDGET:

An estimated budget of \$122,000 is required for fiscal year 2007-08. This includes:

- \$12,000 for a report writer
- \$25,000 for a consultant to arrange and facilitate meetings with concerned stakeholders
- \$20,000 for a consultant to arrange and facilitate First Nations meetings
- \$30,000 for a consultant to host a website to gather concerns for a period of 30 days
- \$10,000 for meetings
- \$25,000 for a consultant to aid in collection of policies, practices, regulations, procedures, laws, and aid in their analysis

